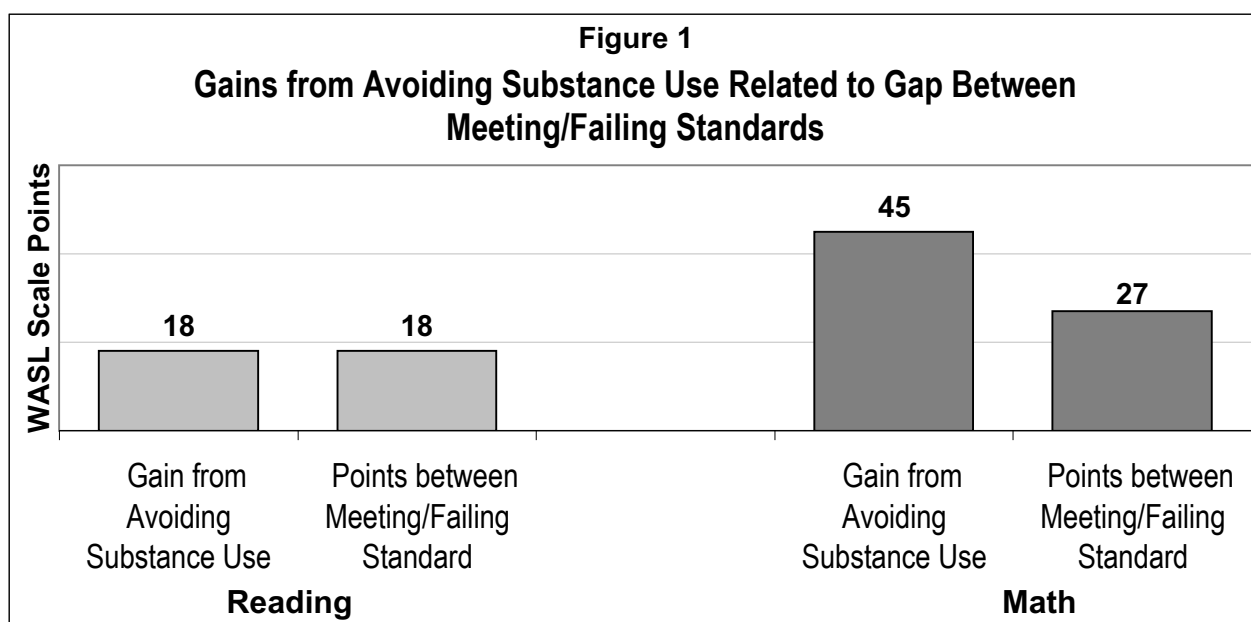




Impact of Peer Substance Use on Middle School Performance in Washington: Summary

This study was designed to (1) assess the level of substance use among student peer groups and its impact on the school performance, as measured by the new Washington state math and reading standards (WASL tests); and (2) estimate the relative impact of school resources, community and social factors on the level of substance use in Washington middle schools.

We linked data from individual level 1999 WASL tests with results of the 1998 Adolescent Health Survey administered through the schools, and with data on community characteristics and school resources. The resulting database covered WASL scores and peer influences for about 10,000 sixth and seventh grade students in 57 schools.¹ Peer substance use was calculated as the average level of alcohol or drug use by students of the same age, gender and race-ethnic group in the school. We then conducted multivariate statistical analyses, which allowed us to determine the independent effect of each factor, when others were held constant.²



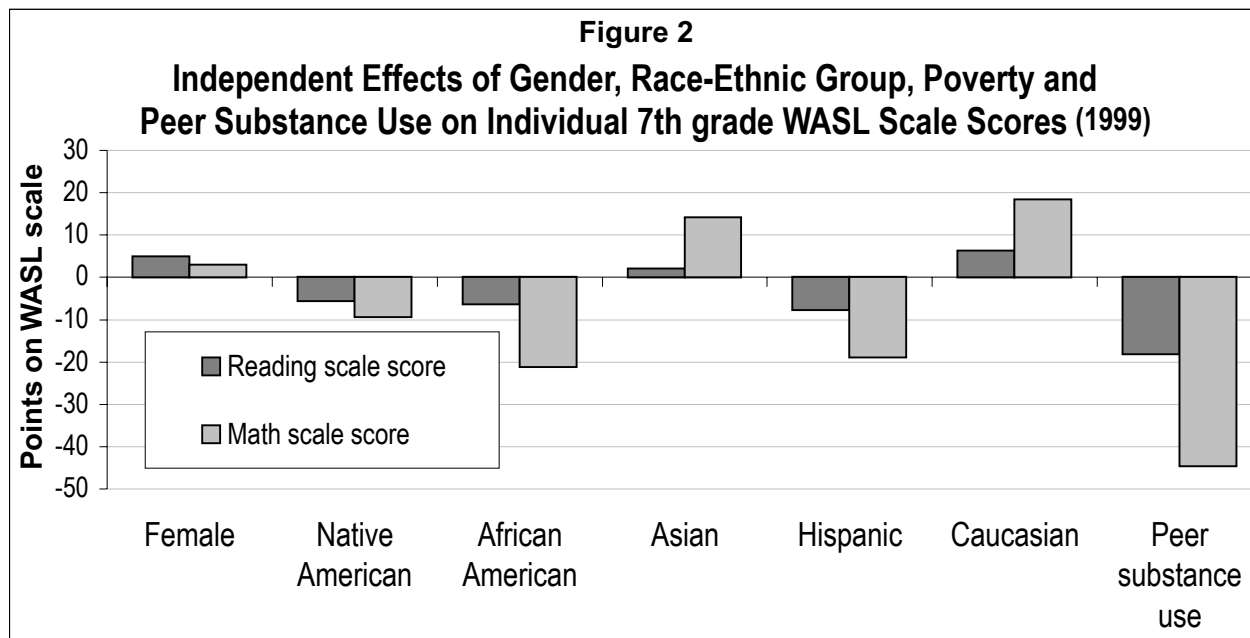
When gender and cultural group were controlled, students whose peers had little or no involvement with drinking and drugs scored higher than students whose peers had a low level of drinking or drug use. On average, students whose peers avoided substance use had WASL scores that were 18 points higher for reading, and 45 points higher for math.³

The average difference between meeting the standard (level 3) and falling below standard (level 2)⁴ was 18 WASL points for reading and 27 points for math. Whether peers at school engaged in no or low levels of drinking or drug use therefore accounted for:

- the entire average difference in whether students met the state reading standard, and
- one and one-half times the average difference in whether they met the math standard.

Individual and Family Factors Affecting WASL Scores

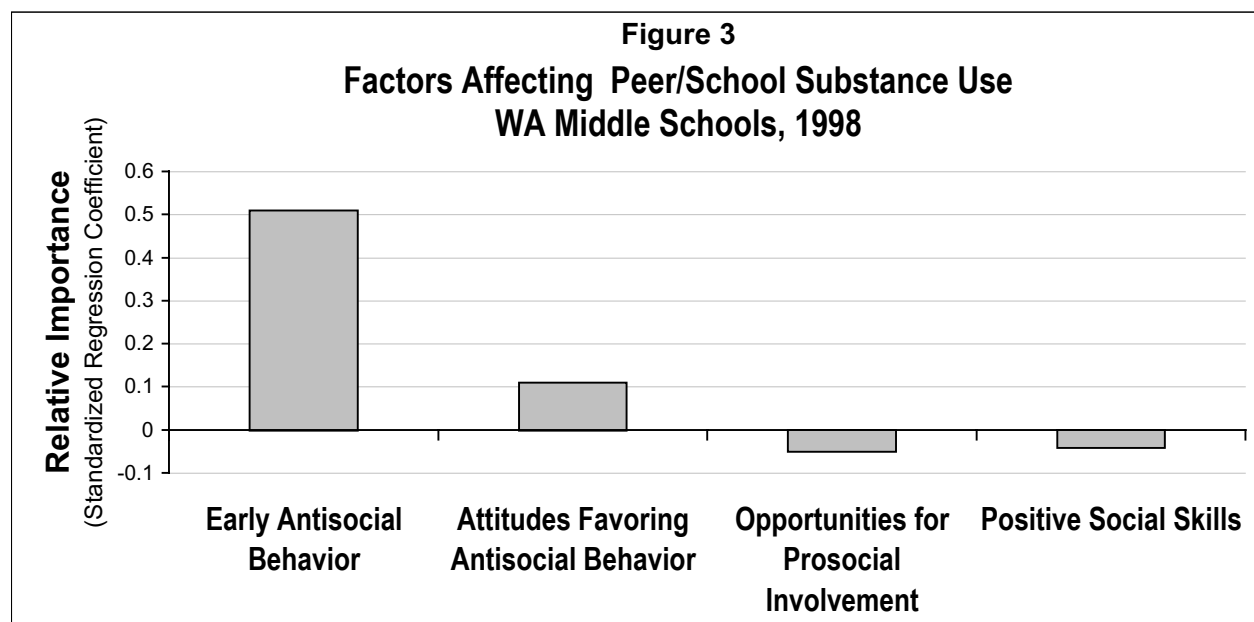
The WASL database contained data on several factors about individuals relevant to their level of school performance, including gender and race-ethnic group. We found that each of these factors was related to test scores. The relative impact of these factors is shown in Figure 2 below:



- Asian-American and Caucasian students score consistently higher than African-American, Hispanic or Native American students, when gender is controlled. The differences are much greater for math than for reading scores.
- Female students score consistently higher than males on both reading and math, when race-ethnic group is taken into account.
- Peer substance use is one of the strongest factors affecting student achievement, even when race-ethnic group and gender are taken into account.

Factors Predicting the Level of Peer Substance Use In Middle Schools

The most important factors reliably indicating the level of substance use in a school are whether students start antisocial behavior at an early age, whether the prevailing attitudes of the students condone or condemn antisocial behavior, and whether students have opportunities for productive involvement in school and community activities. The degree of disruption or mobility in the community is also associated with attitudes favoring antisocial behavior, and thereby indirectly affects the level of substance use. This section reports the independent effect of variables when others are held constant in a path analysis. Readers wishing to understand the full interaction among variables should consult the technical report, which shows the entire path.



Schools where peers had higher levels of early antisocial behavior and attitudes favoring such behavior had higher levels of peer substance use. Early antisocial behavior was measured by asking at what age (beginning 10 or under) students first: used alcohol or drugs; were suspended from school, carried a handgun, sold drugs, stole a car, were arrested, attacked someone with the intent to hurt, got drunk or high at school. Attitudes favoring antisocial behavior included whether it was wrong for someone your age to: take a handgun to school, steal items worth more/less than \$5, pick a fight, attack someone with the idea of hurting them, skip school when parents think they are attending.

- Community disruption, in the form of high rates of fighting, fear, crime, graffiti and empty or abandoned buildings in the neighborhood, was the most important indicator of attitudes favoring antisocial behavior and therefore with peer substance use and lower test scores.

Conclusions: Implications for Policy and Action

This study provides the first large-scale documentation that the level of peer substance use in schools has a substantial impact on the academic performance of students across the state. This impact occurs even when such factors as the gender and race-ethnic group of the individual student are held constant. It is dramatic that we found such a strong impact among middle school students, where substance use is low. In the coming year we will be extending this study to high school students, whose substance use is much higher. The clear implication of this finding is that if we are concerned about academic performance, we must address challenges in students' learning environment—particularly substance use—as well as classroom factors.

We also find that certain factors are reliable indicators of peer substance use. Some of these can be addressed directly by school and community action, including preventing early antisocial behavior by students and providing them opportunities for positive social engagement. Other factors, such as community disruption and poverty, are not within the purview or capacity of schools to change. While other entities are working on improving those conditions, substance use prevention and treatment resources should be targeted to schools with high levels of community disruption and family poverty.

Data Notes

¹ Although more than 15,000 6th grade students in 183 schools took the Adolescent Health Survey in 1998, we were only able to match 57 schools in our database. Because we were unable to match the remaining schools, our sample is not fully representative of the state; most of the 6th grade students who took the AHS were in “piggy-back” schools, rather than in a random sample from the total population of schools in Washington state. In addition, some of the regions were heavily represented, while other regions were under represented. The students included in our sample were close to the state averages on minority status, poverty rate and total school spending per pupil. They had somewhat lower substance use and WASL scores than average.

² For additional information, please refer to the technical report.

³ Our model explains about 10-14% of variance in individual test scores. This level is in the range of major literature published on this topic. The risk and protective factors in our path model account for 40% of the variance in peer substance use.

⁴ The reading scores range from 297 to 245 and the WASL math scores range from 148 to 609. OSPI scores students as being at one of four achievement levels, based on their scale scores. The difference between the average student at reading level 2 (not meeting standard) and level 3 (meeting standard) is 18 points, while the difference between an average student at math level 2 (not meeting standard) and level 3 (meeting standard) is 27 points.

Data Notes, continued

In addition to individual level Washington Assessment of Student Learning (WASL) scores and pooled responses to the Adolescent Health Survey (AHS), we obtained data on school size, demographic characteristics and resources from the office of the Superintendent of Public Instruction, Washington Office of Management, and U.S. Census Bureau school district files. These were added to the file and linked to the school codes in the WASL file. To assure confidentiality and statistical reliability, we did not include data from any school with fewer than 30 survey responses to the AHS.

Since the WASL was not administered at the high school level in 1998, we focused on middle school students. In this way we obtained matches between peer group levels of substance use and individual WASL scores for about 10,000 students in 57 schools. The distribution of students in our sample was extremely close to statewide averages for such factors as poverty rate, race-ethnic composition and school spending. While average school size was as expected somewhat larger than the statewide average, the levels of alcohol and drug use were somewhat lower than average. We are therefore presenting a conservative estimate of the impact of substance use on school performance.

Acknowledgments

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Obtaining Full Report, Related Information

A technical report, including details of the data specifications and statistical analyses, is available from the Washington Kids Count Project at the University of Washington's Human Services Policy Center, Evans School of Public Affairs. It can be ordered in hard copy or downloaded from our website at <http://www.hspc.org>.

Other reports dealing with the conditions of children, including substance use, emotional and behavioral problems, early care and education, school performance, economic, family and community, and safety are also available from our office or on our website.

For assistance:

- call the Human Services Policy Center at (206) 685-7613,
- email hspcnews@u.washington.edu,
- or contact the Washington State Alcohol Drug Clearinghouse at (800) 662-9111 (within Washington state) or (206) 725-9696 (from Seattle or outside Washington).